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| 10/565,845 | 01/26/2006 | Takaaki Kishigami | L9289.06109 | 7753 |
| 52989 | 7590 | 01/12/2009 | | |
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| ZEWDU, MELESS NMN | | | | |
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| 2617 | | | | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/565,845

Applicant(s)

KISHIGAMI ET AL.

Examiner

Meless N. Zawdu

Art Unit

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 October 2008.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 and 31-35 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1 and 31-35 is/are rejected.
7) ☒ Claim(s) 2-28 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-8508)
Paper No(s)/Mail Date 10/15/08
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. This action is in response to the communication filed on 10/23/08.
2. Claims 29 and 30 have been cancelled.
3. Claims 32-35 have been added.
4. Claims 1-28 and 31-35 are pending in this action.
5. This action is final.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, and 31-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sampath et al. (Sampath) (US 6,922,445 B1) in view of Miyata et al. (Miyata) (US 2004/0022205 A1) and Li et al. (LI) (US 6,947,748 B2).

As per claim 1: Sampath discloses a radio communication apparatus (see figs. 1 and 2) comprising:

adaptive space multiplexing transmission (see abstract) for each divided band (sub-carrier), for multi-carrier transmission (see col. 3, lines 60-67; col. 7, lines 62-67; col. 14, line 54-col. 15 line 7; claims 16-17); and

a setting section (see modulation/coding and table) that sets, for each divided band, a respective transmission format used to carry out radio transmission (see col. 3, lines 14-67; col. 6, line 45-col. 7, line 26). But, Sampath does not explicitly teach about a detection section that detects adaptability to space, as claimed. However, in the same field of endeavor, Miyata teaches about a base station that judges whether each slot (channel) is in a suitable condition for space division multiplexing (see paragraph 0070; 0047; claim 7). Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the teaching of Sampath with that of Miyata for the advantage of preventing interference by prohibiting space division multiplexing in a time slot (channel) judged unsuitable while permitting space multiplexing in a time slot (channel) judged suitable (see paragraph 0009). But, Sampath in view of Miyata does not explicitly teach about the feature wherein --- each divided band including a plurality of sub-carrier signals, as claimed. However, in the same field of endeavor Li teaches about sub-carrier allocation wherein an OFDM wide bandwidth is divided into multiple narrow band sub-carriers (clusters), which are arranged to be orthogonal with each other (see col. 1, lines 13-18) and wherein a cluster (a divided band) can contain consecutive or disjoint sub-carriers (see col. 5, lines 9-19). When the references are combined as shown above, the radio transmission would be based on Sampath's adaptability and Miyata's judging techniques. Therefore,

it would have been obvious for one of ordinary skill in the art at the time the invention was made to further modify Sampath in view of Miyata with that of Li for the advantage of adaptively allocating sub-carriers so as to mitigate the effect of inter-cell interference (see col. 1, lines 55-63).

As per claim 31: the features of claim 31 are similar to the features of claim 1, except claim 31 is directed to a method comprising steps by which the apparatus of claim 1 is required perform its intended functions. Therefore, claim 31 is rejected on the same ground and motivation as claim 1.

As per claim 32: the features of claim 32 are similar to the features of claim 1, except
The feature --- a divided bands composing section that composes a plurality of divided bands --- which is taught by Li see (figs. 3, 4 and 13; col. 1, lines 13-18; col. 5, lines 9-19). Therefore, claim 32 is rejected on the same ground and motivation as claim 1.

As per claim 33: Sampath teaches about a radio communication apparatus, wherein the transmission format further includes a modulation scheme and a coding rate (see col. 3, lines 14-26; col. 6, line 45-col. 7, line 26).

As per claim 34: the features of claim 34 are similar to the features of claim 1, except the feature -- composing a plurality of divided bands, each divided band including a plurality of sub-carriers (figs. 3, 4 and 13; col. 1, lines 13-18; col. 5, lines 9-19). Therefore, claim 34 is rejected on the same ground and motivation as claim 1.

As per claim 35: Sampath teaches about a radio communication method, wherein the transmission format further includes a modulation scheme and a coding rate (see col. 3,

lines 14-26; col. 6, line 45-col. 7, line 26).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Meless N. Zewdu whose telephone number is (571) 272-7873. The examiner can normally be reached on 8:30 am to 5:00 pm..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bost Dwayne D can be reached on (571) 272-7023. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Any inquiry of a general nature relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2600.

/Meless N Zewdu/
Primary Examiner, Art Unit 2617
1/10/2009